

SCENERY AND NATURAL HISTORY OF NEW ZEALAND.¹

FEW countries enjoy so many natural advantages of scenery and climate as New Zealand, and none of similar extent can compete with this favoured land in the variety and interest of its indigenous fauna and flora. The scenery of the Southern Alps, with their snow-fields and glaciers, rivals that of Switzerland, and it may be doubted if the fjords of Norway can be compared in romantic beauty with the west coast sounds. The weird volcanic district of the North Island, with its hot lakes and geysers and the still smouldering fires of Tongariro and Ruapehu, stands in startling contrast to the peaceful forest-girt lakes of the south, with the snow-clad mountain peaks reflected in their clear waters. The luxuriance of the subtropical vegetation in the far north, with its kauri forest, tree ferns, and nikau palms, is only eclipsed by the still more luxuriant mixed forest of the wet west coast, with its gigantic evergreen beeches, conifers, and crimson-flowered ratas. The peculiar alpine and subalpine floras, again, with their beautiful *Celmisias*, their magnificent species of *Ranunculus*, their *Ourisias*, and, most interesting of all, the so-called "vegetable sheep" of the genera *Raoulia* and *Haastia*, are probably unsurpassed in botanical interest in any part of the world.

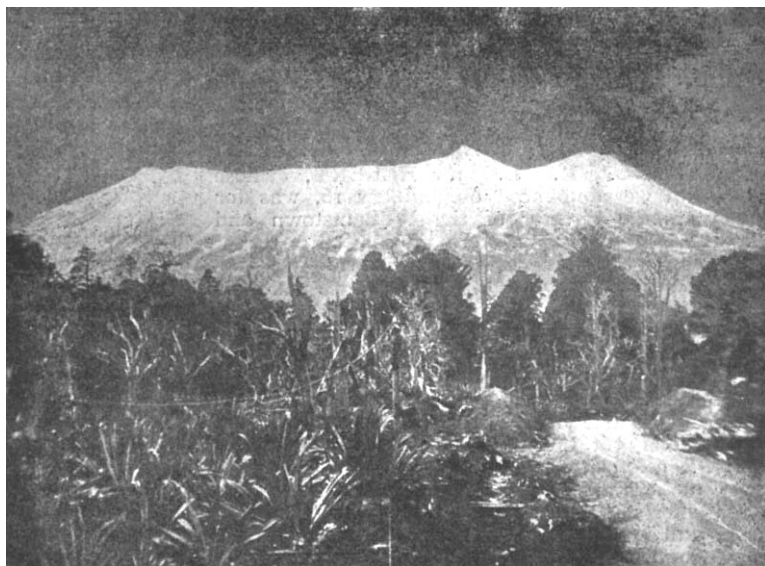
By far the greater number, at any rate of the flowering plants, are endemic, and even the outlying islands have many species absolutely peculiar to them. Some of the more striking plants, such as the cabbage tree (*Cordyline*, known to English horticulturists as *Dracæna*), the flax bush (*Phormium*, shown in the foreground of our illustration), *Olearia haastii* (one of the many beautiful species of this genus found in New Zealand), and some of the shrubby *Veronicas*, have already found their way into English gardens; but no one who has not been in the country can form any idea of the wealth and beauty of its native flora.

Associated with this striking vegetation is a no less unique and interesting indigenous fauna, in which the ancient tuatara and the numerous flightless birds of divers families—kiwis, kakapos, wekas, and *Notornis*—form the most conspicuous features, to say nothing of hosts of remarkable invertebrates, such as *Peripatus*, land planarians and nemertines.

It was inevitable that the process of settlement of the country by Europeans, with the consequent clearing of the forests and the introduction of carnivorous animals—dogs, cats, rats, weasels, and so on—should have a disastrous effect both upon the scenery and upon the plants and animals. Already much of the forest has been destroyed, and many of the unique native birds are almost extinct, especially those which have lost the power of flight, while the tuatara is no longer found on the mainland, having, it is said, been exterminated there by the pigs introduced by Captain

Cook, though still surviving on some of the small islands.

In these circumstances any attempt to arrest the progress of destruction must be heartily welcomed, and the New Zealand Government is to be congratulated upon the vigorous efforts which it is making in this direction. The report on scenery preservation recently issued by the Department of Lands is a most interesting document, with a wealth of beautiful photographic illustrations, one of the most striking of which we reproduce. We learn from this publication that already nearly three million acres have been set aside as national parks, and since the Land Act of 1892 came into force "the protection and preservation of the beautiful natural scenery with which New Zealand is so richly endowed has been steadily kept in view, and when any portion of Crown lands has been opened for settlement, areas of specially attractive forest, or land surrounding waterfalls, caves, or thermal springs, have been excluded from sale and set apart for all time by permanent reservation." In 1903 a special Scenery Preservation Act was passed, dealing with the acquisition and reservation of all



Along the Route of the North Island Main Trunk Railway: Ruapehu Mountains, from Raurimu. (Photo. C. Spencer.)

suitable lands, whether Crown, freehold, or native. A further Act provided for the formation of "The Scenery Preservation Board," which now acts as an advisory board to the Government, and reports on all cases of suggested reservations. That this board is no mere shadow but a really efficient instrument for the purpose in view is proved by the amounts which have been paid by way of compensation for land acquired during the three years of its existence. In 1904-5 the amount was only 216*l.* 4*s.* 10*d.*, but in 1906-7 it had already risen to 785*l.* 19*s.* 10*d.*!

No less important is the work which the Government has long had in hand in protecting the native animals and providing sanctuaries where they may remain unmolested, either by man or by the noxious animals which man has introduced. For this admirable purpose some of the small islands off the coast have been selected, such as Little Barrier Island in the north, Resolution Island in the south-west, and Kapiti Island in Cook Straits. These islands have been well chosen so as to give as great a range as

¹ (1) "Report on Scenery Preservation for the Year 1906-7." (Published by the New Zealand Government, 1907.)

(2) "Report on a Botanical Survey of Kapiti Island." By L. Cockayne. (Published by the New Zealand Government, 1907.)

possible in climatic conditions, nor has the purely scientific aspect of the question been neglected, for simultaneously with the document to which we have already referred, the New Zealand Government has just issued a detailed "Report on a Botanical Survey of Kapiti Island," by Dr. L. Cockayne, a botanist who is already widely known for his researches on the New Zealand flora. This exhaustive and painstaking piece of work deals with the physical geography and climate of the island, and with the introduced plants and animals, as well as with the indigenous flora. The latter is treated under the headings of the various plant-formations—classified as forest, shrub, coastal, meadow, and rock-formations—and much attention is devoted to ecological problems. The suitability of the island as a plant and animal sanctuary is discussed, and lists are given of the native and introduced plants. This report, again, is illustrated by numerous excellent photographs taken by the author.

The interesting monograph which we have thus briefly summarised is a good example of the activity and enthusiasm with which the representatives of natural science in New Zealand are carrying on the good work initiated by such pioneers as von Haast, Hutton, Hector, Kirk, Buller, and Parker, to mention only some among those who have already passed away from the scene of their labours.

ARTHUR DENDY.

LIEUT.-COL. R. L. J. ELLERY, C.M.G., F.R.S.

LIEUT.-COL. R. L. J. ELLERY, whose death we announced on January 16, was for many years the director of the Williamstown and Melbourne Observatories. To review his career is to recall the history of astronomy in Australia, so intimately was he connected with its progress. When he took up work as Government Astronomer in a rising colony, the instruments at his disposal were small, and the funds available for promoting astronomical research necessarily limited. The extension witnessed in the last forty years is due in no small measure to his initiative, and not the least of his services was to induce the colony to recognise the claims of science and to make more liberal provision for its needs. By his efforts arose the new observatory at Melbourne, and by his activity it became the centre for the prosecution of much useful work. There, too, at his instigation was mounted the four-foot reflector, at the time of its erection the most powerful instrument in the southern hemisphere. This instrument was much used for the examination of Herschel's nebulae, but in a new society, intent upon material progress, such a telescope was perhaps of even greater use by the interest it aroused in science generally. It served as a permanent reminder of the progress of science, and of the necessity of meeting its demands. For as the colonies enlarged, the claims of science required increasing support. In climatology, Col. Ellery's powers of organisation were invaluable. Not only did he collect the necessary information which indicated the more valuable localities for settlement, but gradually issued isobaric charts and storm warnings, at first applicable to the coast, but afterwards, as other colonies joined in an uniform scheme, published daily weather charts extending over the whole continent. Terrestrial magnetism was another subject he pursued with great eagerness, and geodesy, including pendulum experiments and longitude determinations, also claimed the attention of the staff. In a word, the observatory was the centre of enterprise and activity, encouraging the scientific spirit in many directions.

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Forty years ago, the condition of meridional astronomy in the southern hemisphere was in a backward condition, and naturally much attention had to be paid to the determination of star places. Two standard star catalogues were issued from the Melbourne Observatory under Col. Ellery's direction, and, in addition to this special work, zone observations on a large scale were carried out. Taking part in the work of the International Star Chart has increased the meridian measures very considerably, since the observatory has loyally assisted others in providing the positions of guiding stars, where required, and for the final reduction of the measures on the photographic plates. Both in 1874 and 1882, Australia furnished a number of stations for the observation of the transit of Venus, and particularly on the former occasion the late director was instrumental in providing suitable equipment, and assisted the general programme very materially.

Col. Ellery retired from the office of director in 1895. Some portion of his leisure he devoted to the preparation of a history of the beginnings and growth of astronomy in Australia, and in various ways he was prominent in promoting scientific interests. He was elected a Fellow of the Royal Society in 1873, was a Fellow of the Royal Astronomical Society, and of many colonial societies for the promotion of scientific aims.

NOTES.

IN the Henry Sidgwick memorial lecture at Newnham College, Cambridge, on January 25, Mr. Balfour spoke on decadence, and remarked that progress is with the West and with the communities of the European type. "If our energy of development," he is reported to have said, "were some day exhausted, who can believe that there remains any external source from which it can be renewed? Where are the untried races competent to construct out of the ruined fragments of our civilisation a new and better habitation for the spirit of man?" He answered his own questions with the assertion that such nations do not exist. But Japan has been steadily assimilating what is most important in European civilisation for some years now, and her system of education is every year approaching in efficiency anything the West has to show. In the contingency of which Mr. Balfour spoke, it is easily conceivable that a people with a genius for development, such as Japan has shown, may take naturally the place of superiority and develop a system which is a distinct advance on any civilisation the world has yet known. Men of science will be pleased with Mr. Balfour's tribute, in the latter part of his lecture, to the achievements effected by science and to the extent science has assisted human development, but they will at the same time remember that the Government of which Mr. Balfour was the leader assisted scientific work no more than other Governments. Statesmen are eloquent in praising scientific work and methods, but few of them have sufficient courage of their expressed convictions to make adequate provision for the extension of natural knowledge which is the life-blood of the modern State.

We regret to see the announcement of the death of Sir Thomas McCall Anderson, regius professor of medicine in the University of Glasgow since 1900.

MR. MORRIS K. JESUP, who died last week, bequeathed 200,000*l.* to the American Museum of Natural History for its collections. Mr. Jesup was president of the museum for twenty-five years; his name is familiar to anthropologists, and naturalists generally, as that of one who